

IFW16

RAW SEQUENCE LISTING

DATE: 07/30/2004

PATENT APPLICATION: US/09/967,237A

TIME: 12:24:38

Input Set : A:\PTO.DA.txt

Output Set: N:\CRF4\07302004\I967237A.raw

```
3 <110> APPLICANT: Zavada, Jan
        Pastorekova, Silvia
         Pastorek, Jaromir
 7 <120> TITLE OF INVENTION: MN Gene and Protein
9 <130> FILE REFERENCE: D-0021.5B-2
11 <140> CURRENT APPLICATION NUMBER: 09/967,237A
12 <141> CURRENT FILING DATE: 2001-09-27
14 <150> PRIOR APPLICATION NUMBER: 09/178,115
15 <151> PRIOR FILING DATE: 1998-10-23
17 <160> NUMBER OF SEQ ID NOS: 116
19 <170> SOFTWARE: PatentIn Ver. 2.1
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 1522
23 <212> TYPE: DNA
24 <213> ORGANISM: HUMAN
26 <220> FEATURE:
27 <221> NAME/KEY: CDS
28 <222> LOCATION: (13)..(1389)
30 <220> FEATURE:
31 <221> NAME/KEY: mat peptide
32 <222> LOCATION: (124)..(1389)
34 <400> SEQUENCE: 1
35 acagteagee ge atg get eec etg tge eec age eec tgg etc eet etg ttg 51
                 Met Ala Pro Leu Cys Pro Ser Pro Trp Leu Pro Leu Leu
36
37
                         -35
39 atc deg ged ect get dea gge etc act gtg daa etg etg tea etg
40 Ile Pro Ala Pro Ala Pro Gly Leu Thr Val Gln Leu Leu Ser Leu
                   -20
                                       -15
43 ctg ctt ctg atg cct gtc cat ccc cag agg ttg ccc cgg atg cag gag
                                                                      147
44 Leu Leu Met Pro Val His Pro Gln Arg Leu Pro Arg Met Gln Glu
                - 5
                                - 1
                                     1
                                                                      195
47 gat tee eee ttg gga gga ggc tet tet ggg gaa gat gae eea etg gge
48 Asp Ser Pro Leu Gly Gly Gly Ser Ser Gly Glu Asp Asp Pro Leu Gly
        10
49
51 gag gag gat ctg ccc agt gaa gag gat tca ccc aga gag gag gat cca
52 Glu Glu Asp Leu Pro Ser Glu Glu Asp Ser Pro Arg Glu Glu Asp Pro
                        30
55 ccc gga gag gag gat cta cct gga gag gag gat cta cct gga gag gag
56 Pro Gly Glu Glu Asp Leu Pro Gly Glu Glu Asp Leu Pro Gly Glu Glu
                                        50
59 gat cta cct gaa gtt aag cct aaa tca gaa gaa gag ggc tcc ctg aag
60 Asp Leu Pro Glu Val Lys Pro Lys Ser Glu Glu Glu Gly Ser Leu Lys
```



60

61

RAW SEQUENCE LISTING DATE: 07/30/2004
PATENT APPLICATION: US/09/967,237A TIME: 12:24:38

Input Set : A:\PTO.DA.txt

Output Set: N:\CRF4\07302004\1967237A.raw

	tta																387
64	Leu	Glu	Asp	Leu	Pro	Thr	Val	Glu	Ala	Pro	Gly	Asp	Pro	Gln	Glu	Pro	
65			75					80					85				
	cag																435
68	Gln	Asn	Asn	Ala	His	Arg	Asp	Lys	Glu	Gly	Asp	Asp	Gln	Ser	His	$\operatorname{Trp}$	
69		90					95					100					
71	cgc	tat	gga	ggc	gac	ccg	CCC	tgg	CCC	cgg	gtg	tcc	cca	gcc	tgc	gcg	483
72	Arg	Tyr	Gly	Gly	Asp	Pro	Pro	Trp	Pro	Arg	Val	Ser	Pro	Ala	Cys	Ala	
	105					110					115					120	
	ggc																531
76	Gly	Arg	Phe	Gln	Ser	Pro	Val	Asp	Ile	Arg	Pro	Gln	Leu	Ala	Ala	Phe	
77					125					130					135		
	tgc																579
80	Cys	Pro	Ala	Leu	Arg	Pro	Leu	Glu	Leu	Leu	Gly	Phe	Gln	Leu	Pro	Pro	
81				140					145					150			
	ctc																627
84	Leu	Pro	Glu	Leu	Arg	Leu	Arg	Asn	Asn	Gly	His	Ser		Gln	Leu	Thr	
85			155					160					165				
	ctg																675
88	Leu	Pro	Pro	Gly	Leu	Glu	Met	Ala	Leu	Gly	Pro	Gly	Arg	Glu	Tyr	Arg	
89		170					175					180					
	gct																723
92	Ala	Leu	Gln	Leu	His		His	$\operatorname{Trp}$	Gly	Ala		Gly	Arg	Pro	Gly		
	185					190					195					200	
95	gag	cac	act	ata	gaa	aac	cac	cqt	ttc	cct	qcc	qaq	atc	cac	gtg	gtt	771
96	Glu				Glu					Pro					Val		
96 97	Glu	His	Thr	Val	Glu 205	Gly	His	Arg	Phe	Pro 210	Ala	Glu	Ile	His	Val 215	Val	010
96 97 99	Glu	His ctc	Thr agc	Val acc	Glu 205 gcc	Gly ttt	His gcc	Arg aga	Phe gtt	Pro 210 gac	Ala gag	Glu gcc	Ile ttg	His ggg	Val 215 cgc	Val ccg	819
96 97 99 10	Glu cac O His	His ctc	Thr agc	Val acc r Thi	Glu 205 gcc Ala	Gly ttt	His gcc	Arg aga	Phe gtt Val	Pro 210 gac Asp	Ala gag	Glu gcc	Ile ttg	His ggg Gly	Val 215 cgc 'Arg	Val	819
96 97 99 10	Glu cac O His	His ctc Le	Thr agc 1 Sei	Val acc r Thr 220	Glu 205 gcc Ala	Gly ttt Phe	His gcc Ala	Arg aga Arg	Phe gtt Val 225	Pro 210 gac Asp	Ala gag Glu	Glu gcc ı Ala	Ile ttg Leu	His 999 Gly 230	Val 215 cgc 'Arg	Val ccg g Pro	
96 97 99 10 10	Glu cac O His 1 3 ggs	His ctc Lev	Thr agc 1 Sei	Val acc r Thr 220 g gco	Glu 205 gcc Ala )	Gly ttt Phe	His gcc Ala	Arg aga Arg	Phe gtt Val 225	Pro 210 gac Asp	Ala gag Glu gag	Glu gcc Ala g gag	Ile ttg Leu ggg	His 999 Gly 230	Val 215 cgc Arg	Val ccg g Pro a gaa	819
96 97 99 10 10	Glu cac O His 1 3 ggs 4 Gly	His ctc Lev	Thr agc 1 Sei c ctg y Lei	Val acc r Thr 220 g gcc r Ala	Glu 205 gcc Ala )	Gly ttt Phe	His gcc Ala	Arg aga Arg gcc Ala	Phe gtt Val 225 ttt	Pro 210 gac Asp	Ala gag Glu gag	Glu gcc Ala g gag	ttg Lev ggg Gly	His 999 1 Gly 230 230 250 Pro	Val 215 cgc Arg	Val ccg g Pro	
96 97 99 10 10 10	Glu cac O His 1 3 ggs 4 Gly 5	His ctc Let g ggo g Gly	Thr agc Ser c cto y Ler 23!	Val acc r Thi 220 g gco i Ala	Glu 205 gcc Ala ) gtg a Val	ttt The Phe tto	His gcc Ala g gcc n Ala	aga Arg gcc Ala 240	Phe gtt Val 225 ttt	Pro 210 gac Asp c ctg	Ala gag Glu gag Glu	Glu gcc ı Ala ı gaç ı Glu	ttg Leu ggg Gly 245	His ggg Gly 230 ccg	Val 215 cgc Arg ggaa g Gli	Val ccg g Pro a gaa ı Glu	867
96 97 99 10 10 10 10	Glu cac His gga Gly Gly Gly Gly Gly Gly Gly	His ctc Lev g Gly	Thr agc Ser cto Let 23!	Val acc r Thr 220 g gcc r Ala	Glu 205 gcc Ala ) gtc gtc Val	ttt Phe ttg Leu	His gcc Ala g gcc Ala	aga Arg gco Ala 240	Phe gtt Val 225 ttt Phe	Pro 210 gac Asp ctg ctg Leu cgc	Ala gag Glu gag Glu	gcc gcc Ala ggag Glu ggaa	ttg Leu ggg Gly 245	ggg Gly 230 c ccc	Val 215 egc Arg gaa g Glu	Val ccg g Pro a gaa u Glu t gag	
96 97 99 10 10 10 10	Glu cac His gga gga Gly	His ctc s Lew ggo / Gly c ago	Thr agc Ser C cto Y Ler 23! t gco r Ala	Val acc r Thr 220 g gcc r Ala	Glu 205 gcc Ala ) gtc gtc Val	ttt Phe ttg Leu	His gcc Ala g gcc Ala g ttg	aga Arg gcc Ala 240 gctg	Phe gtt Val 225 ttt Phe	Pro 210 gac Asp ctg ctg Leu cgc	Ala gag Glu gag Glu	Glu gcc Ala ggag Glu ggaa Glu	ttg Lev ggg Gly 245 gaa Glu	ggg Gly 230 c ccc	Val 215 egc Arg gaa g Glu	Val ccg g Pro a gaa ı Glu	867
96 97 99 10 10 10 10 10	Glu cac His gga Gly	His ctc s Let a ggo / Gly c agt n Set 250	Thr agc Ser Coto Coto Coto Coto Coto Coto Coto Cot	Val acc r Thr 220 g gcc 1 Ala 5 c tat a Tyr	Glu 205 gcc Ala ) C gtc a Val	ttt A Phe g ttg Leu g cag	gcc Ala gcc Ala gcc Ala Leu 255	aga Arg gco Ala 240 gcto Leu	Phe gtt Val 225 ttt Phe	Pro 210 gac Asp ctg Leu cgc Arg	Ala gag Glu gag Glu gag Glu gag Leu	gcc Ala gag gag Glu gaa Glu 260	ttg ttg Lev ggg Gly 245 gaa Glv	ggg Gly 230 C CCG Pro G ato	Val 215 ege Arg gaa b Glu e get	val ccg g Pro a gaa u Glu t gag a Glu	867 915
96 97 99 10 10 10 10 10 10	Glu cac His Gly	His ctc s Len a ggo / Gly c agh c agh 250 a ggo	Thr agc Ser Coto Coto Coto Coto Coto Coto Coto Cot	Val  acc r Thr 220 g gcc r Ala tata tata g Tyr a gag	Glu 205 gcc Ala ) C gtc a Val c gac c Glu	ttt a Phe g ttg Leu g cag a Glr	gcc Ala gcc Ala gcc Ala Leu 259	aga Arga Arga Arga Arga Ala 240 G Ctg Leu	Phe gtt Val 225 ttt Phe y tct Ser	Pro 210 gac Asp ctg ctg cArg ctg carage	Ala gag Glu gag Glu gag Leu gag	gcc Ala gag Glu gag Glu gaa Glu 260 cata	ttg ttg Ggg Gly 245 Glu Glu	ggg Gly 230 cccs Pro	Val 215 egc Arg gaa Glu gaa Ala	ccg g Pro a gaa u Glu t gag a Glu	867
96 97 99 10 10 10 10 10 11 11	Glu  cac 0 His 1 3 ggs 4 Gly 5 7 aac 8 Asr 9 1 gas 2 Glu	tis ctc s Len a ggo y Gly c agh c agh 1 Sen 250 a ggo 1 Gly	Thr agc Ser Coto Coto Coto Coto Coto Coto Coto Cot	Val  acc r Thr 220 g gcc r Ala tata tata g Tyr a gag	Glu 205 gcc Ala ) C gtc a Val c gac c Glu	ttt Phe ttg ttg Leu g cag g cag g cag g Glr cag	gcc Ala gcc Ala gcc Ala gtc 255 gtc Val	aga Arga Arga Arga Arga Ala 240 G Ctg Leu	Phe gtt Val 225 ttt Phe y tct Ser	Pro 210 gac Asp ctg ctg cArg ctg carage	gag gag gag gag Gli ttg Lei gag	gcc n Ala g gag n Glu g gaa n Glu 260 c ata o Ile	ttg ttg Ggg Gly 245 Glu Glu	ggg Gly 230 cccs Pro	Val 215 egc Arg gaa Glu gaa Ala	ccg g Pro a gaa u Glu t gag a Glu c ctg	867 915
96 97 99 10 10 10 10 10 11 11	Glu  cac 0 His 1 3 ggs 4 Gly 5 7 aac 8 Ass 9 1 gas 2 Glu 3 269	His ctc s Len a ggo / Gly c agt 1 Sen 250 a ggo 1 Gly	Thr  agc 1 Ser 2 cto 3 cto 3 cto 3 cto 3 cto 4 cto	Val acc r Thr 220 g gcc n Ala c tat a Tyr a gag r Gli	Glu 205 gcc Ala ) c gtc x Val c gac c Glu g act	ttt a Phe g ttg Leu g cag a Glr c cag c Glr 270	gcc Ala gcc Ala gcc Ala gcc Leu 255 gtc Val	aga Arg Arg Ala 240 y ctg Leu Cca Pro	gtt g Val 225 ttt Phe g tct Ser a gga	Pro 210 gac Asp ctg ctg cArg Leu	gag gag gag gag ttg Let gag Asp	gcc gcc Ala ggag Glu ggaa Glu 260 ata Ile	ttg Lev ggg lGly 245 lgaa lGlv ltct	ggg 1 Gly 230 2 ccc y Pro 1 ato 1 le	Val 215 cgc Arg gaa Gli Cgci Ala cto	ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280	915 963
96 97 99 10 10 10 10 10 11 11 11 11	Glu cac 0 His 1 3 ggs 4 Gly 7 aac 8 Ass 9 1 gas 2 Glu 3 265 5 ccc	His  ctc s Let a ggo y Gly c agt c agg a ggo a ggo a Gly c tct	Thr  agc I Ser	Val acc r Thi 220 g gcc n Ala c tat a Tyr a gag r Gli	Glu 205 gcc Ala ) C gtc Gaval c gac Glu g act Thi	ttt a Phe g ttg Leu g cag a Glr c cag c cgc	gcc Ala gcc Ala g gcc a Ala g tto 255 g gtc Val	aga Arg aga Arg Ala 240 Gctg Leu Cca	gtt gVal 225 ttt Phe g tct Ser Gga	Pro 210 gac Asp 6 ctg	gag Glu gag Glu gag Leu gag Asp 275	gcc a Ala g gag g gaa a Glu 260 c ata b Ile	ttg ttg ggg Gly 245 gaa Glu tct	ggg Gly 230 CCC Pro A atom Ile C gca T Ala	Val 215 cgc Arc ) gaa gaa cca cca Lei gaa	ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280 t aca	867 915
96 97 99 10 10 10 10 10 11 11 11 11 11	Glu  cac 0 His 1 3 gga 4 Gly 5 7 aac 8 Ass 9 1 gaa 2 Glu 3 265 5 ccc 6 Pro	His  ctc s Let a ggo y Gly c agt c agg a ggo a ggo a Gly c tct	Thr  agc I Ser	Val acc r Thi 220 g gcc n Ala c tat a Tyr a gag r Gli	Glu 205 gcc Ala ) c gtc val c gac c Glu g act g act c agc e Ser	ttt a Phe g ttg Leu g cag a Glr cag c Cag	gcc Ala gcc Ala g gcc a Ala g tto 255 g gtc Val	aga Arg aga Arg Ala 240 Gctg Leu Cca	gtt gVal 225 ttt Phe g tct Ser Gga	Pro 210 gac Asp ctog Arg Arg Arg Leu tata	gag gag gag Gli ttg Lei gag Asp 275	gcc a Ala g gag g gaa a Glu 260 c ata b Ile	ttg ttg ggg Gly 245 gaa Glu tct	ggg Gly 230 CCC Pro A atom Ile C gca T Ala	Val 215 cgc Arg gaa Gli cgc Lei Lei gac	ccg g Pro a gaa l Glu t gag a Glu c ctg u Leu 280 t aca r Thr	915 963
96 97 99 10 10 10 10 10 11 11 11 11 11	Glu  cac 0 His 1 3 ggs 4 Gly 5 7 aac 8 Ass 9 1 gas 2 Glu 3 265 5 ccc 6 Pro 7	tis ctc s Let gg Gl	Thr  age ctog y Let 23! t geo r Ala c tea y Sei t gae r Asp	Val  acc r Thr 220 g gcc n Ala c tat a Tyr a gag r Glu c tto	Glu 205 gcc Ala ) c gtc yal c gac gac gact gact gact gact gact	ttt a Phe g ttg Leu g cag n Glr c cag c Cag c Arg	gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala ycc Ala gcc Ala ycc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala	aga Arg aga Arg Arg ctg Leu ctg Cre Pro	gtt g Val 225 ttt phe g tct ser g ga gga c gaa e Glr	Pro 210 gac Asp ctg ctg ctg ctg tag ctg tag tat tat tyr 290	gag gag gag Gli ttg Lei gag 275 gag Gli	gcc i Ala g gac i Glu g gaa i Glu 260 ata o Ile 6	ttg ttg ggc ggg gaa gaa gaa gaa gtct ser	ggg Gly 230 Cccc Alato Alato Cccc Ccc Alato Cccc Ccc Ccc Ccc Ccc Ccc Ccc Ccc Ccc C	Val 215 cgc Arg gaa Gli gaa Lei Lei 29	ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280 t aca r Thr	<ul><li>867</li><li>915</li><li>963</li><li>1011</li></ul>
96 97 99 10 10 10 10 10 11 11 11 11 11 11	Glu  cac 0 His 1 3 ggs 4 Gly 5 7 aac 8 Ass 9 1 gas 2 Glu 3 265 5 ccc 6 Pro 7	His  ctc s Let a ggo / Gly c agt n Sen 250 a ggo c tct c tct c tct c Sen	Thr  age c ctg y Lei 23! t gee r Ala c tea y Sei t gae r Asp	Val  acc r Thr 220 g gcc n Ala 5 c tat a Tyr a gas r Gli c tto p Phe	Glu 205 gcc Ala ) c gtc yal c gac	ttt a Phe g ttg Leu g cag n Glr 270 c cag c Arg	gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala ycc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala	aga Arg aga Arg Arg Control Ala Arg	gtt gVal 225 ttt Phe g tct g Ser gga Gly caae	Pro 210 gac Asp ctg ctg ctg ctg tat tat tat 290 act	gag gag gag Gli ttg Lei gag 275 Gli ggag Gli ggag	gcc i Ala g gac i Glu g gaa i Glu 260 c ata b Ile i ggg i Gly ttt	ttg ttg ggg ggg gaa gaa gaa gaa gt tct ser gtct	ggg Gly 230 Cccc Ala ato Ala cctc Cccc Cccc Cccc Cccc Cccc Cccc Ccc	Val 215 cgc Arg g gaa b Gli e Ala cte a cte g act 1 Th: 29% acg	ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280 t aca r Thr a gtg	915 963
96 97 99 10 10 10 10 10 10 11 11 11 11 11 11 11	Glu  cac 0 His 1 3 gga 4 Gly 5 7 aac 8 As 9 1 gaa 2 Glu 3 26 5 ccc 6 Pro 7 9 ccc 0 Pro	His  ctc s Let a ggo / Gly c agt n Sen 250 a ggo c tct c tct c tct c Sen	Thr  age c ctg y Lei 23! t gee r Ala c tea y Sei t gae r Asp	Val  acc r Thr 220 g gcc r Ala 5 c tat a Tyr a gac r Gli c ttc p Phe t gcc s Ala	Glu 205 gcc Ala ) c gtc a Val c gac c Glu g act i Thi c ago 285 c cag a Glr	ttt a Phe g ttg Leu g cag n Glr 270 c cag c Arg	gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala ycc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala gcc Ala	aga Arg aga Arg Arg Control Ala Arg	gtt y Val 225 ttt phe y tct Ser Gly Caae Glr	Pro 210 gac Asp ctg Arg Arg Arg Arg Arg Arg Arg Arg Arg Ar	gag gag gag Gli ttg Lei gag 275 Gli ggag Gli ggag	gcc i Ala g gac i Glu g gaa i Glu 260 c ata b Ile i ggg i Gly ttt	ttg ttg ggg ggg gaa gaa gaa gaa gaa gaa	ggg 1 Gly 230 2 ccc 3 ato 1 le 2 gca 4 Ala 5 ctc 6 Le 6 ca 6 Glr	Val 215 cgc Arg gaa g Gli e Ala Lei 1 Th: 29: g accide Th:	ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280 t aca r Thr	<ul><li>867</li><li>915</li><li>963</li><li>1011</li></ul>
96 97 99 10 10 10 10 10 10 11 11 11 11 11 11 11	Glu  cac 0 His 1 3 gga 4 Gly 5 7 aac 8 Asi 9 1 gaa 2 Glo 5 ccc 6 Pro 7 9 ccc 0 Pro 1	tis  ctc ctc s Let a ggo / Gly c agt 250 a ggo c tct c tct c set	Thr  agc c ctq y Let 23! t gcc r Ala 0 c tca y Set t gac r Asj c Cy:	Val  acc r Thr 220 g gcc r Ala c tat a Tyr a gag r Gli c ttc p Phe t gcc s Ala 300	Glu 205 gcc Ala ) c gtc a Val c gac c Glu g act 1 Thr c ago 2 85 c cac a Glr	ttt a Phe g ttg Let g cag a Glr c cag c Glr c cag c g cg c g cg c g cg c Arg c g ggt a Gly	gcc Ala gcc Ala g gcc Ala g ttg 1 Leu 255 g gtc 1 Val 0 tac g Tyr	aga	gtt y Val 225 ttt phe y tct Ser gga Gly Caa Glr Try 305	Pro 210 gac Asp ctg Arg Arg Arg Tyr 290 gact Thr	gag gag gag Glu gag Leu gag Asp 275 gag Glu gag Val	gcc i Ala g gag i Glu g gaa i Glu 260 ata b Ile i Gly G gttt	ttg ttg ggg ggg gas gas gas gas gas gas gas ga	ggg 1 Gly 230 2 ccc 2 pro 3 ato 3 tec 2 ctc 3 ctc	Val 215 cgc Arg gaa g Gli g Ala Lei 1 Ac 1 Ac 29 3 ac 1 Th:	ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280 t aca r Thr 5 a gtg r Val	<ul><li>867</li><li>915</li><li>963</li><li>1011</li><li>1059</li></ul>
96 97 99 10 10 10 10 10 10 11 11 11 11 11 11 12 12 12	Glu  cac 0 His 1 3 gga 4 Gly 5 7 aac 8 As 9 1 gaa 2 Glu 3 26 5 ccc 6 Pro 7 9 ccc 0 Pro 1 1 at 3 at 5	tis  ctc s Let ggg agg agg agg agg ctg ctg ctc gct gct gct	Thr  agc c ctq y Lei y 23! t gcc r Ala c tca y Ser t gac r Asp c tg c Cyr	Val  acc r Thr 220 g gcc r Ala c tat a Tyr a gag r Gli c ttc p Phe t gcc s Ala 300 t gct	Glu 205 gcc Ala ) c gtc a Val c gac c Glu g act 1 Thr c agc 285 c cac a Glr ) c aac	ttt a Phe g ttg Leu g cag i Glr cag c Glr 270 c gggt i Gly	His gcc Ala gc	aga	gtt yval 225 ttt phe y tct Ser Gly Caa Car Try 305	Pro 210 gac Asp ctg Arg Arg Arg Arg Arg Tyr 290 gact Thr	gag gag gag Glu gag Glu gag Glu gag Glu gag Val	gcc i Ala g gag i Glu g gaa i Glu 260 ata b Ile G ggs i Gly g ttt	ttg ttg ggc ggg 245 gaa gaa gtct ser gtct aace Asr	ggg a Gly 230 c ccc r Pro Gar Alac c ccc c ccc r Leu 310 c ccc c ccc r Glr 310 c ccc c ccc c ccc c ccc c ccc c ccc c c	Val 215 Cgc Arc gaa g Gli c Gcli a Ctc a Lei g acc g acc in Thi g acc in Thi )	val ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280 t aca r Thr a gtg r Val	<ul><li>867</li><li>915</li><li>963</li><li>1011</li></ul>
96 97 99 10 10 10 10 10 10 11 11 11 11 11 12 12 12	Glu  cac 0 His 1 3 ggs 4 Gly 5 aac 8 Ass 9 1 gas 2 Glu 3 265 6 Pro 7 9 ccc 0 Pro 1 atc 4 Met	tis  ctc s Let ggg agg agg agg agg ctg ctg ctc gct gct gct	Thr  agc cto y Lei y 23! t goo c to y Sei t gao c to y Sei t gao c Cy:	Val  acc r Thr 220 g gcc n Ala 5 c tat a Tyr a gag r Gli c ttc p Phe t gcc s Ala 300 t gct r Ala	Glu 205 gcc Ala ) c gtc a Val c gac c Glu g act 1 Thr c agc 285 c cac a Glr ) c aac	ttt a Phe g ttg Leu g cag i Glr cag c Glr 270 c gggt i Gly	His gcc Ala gc	aga Arg Arg Ala 240 Ala 240 Ala Pro Ala	gtt yal 225 ttt phe gtc	Pro 210 gac Asp ctg Arg Arg Arg Arg Tyr 290 gact Thr	gag gag gag Glu gag Glu gag Glu gag Glu gag Val	gcc i Ala g gag i Glu g gaa i Glu 260 ata b Ile G ggs i Gly g ttt	ttg ttg ggg ggg gaa gaa gaa gtct Ser ser aac Asr	ggg Gly 230 c ccg Pro	Val 215 Cgc Arc gaa g Gli c Gcli a Ctc a Lei g acc g acc in Thi g acc in Thi )	ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280 t aca r Thr 5 a gtg r Val	<ul><li>867</li><li>915</li><li>963</li><li>1011</li><li>1059</li></ul>
96 97 99 10 10 10 10 10 10 11 11 11 11 11 12 12 12 12	Glu cac 0 His 1 3 ggs 4 Gly 5 7 aac 8 Ass 9 1 gas 2 Glu 3 26 6 Pro 7 9 ccc 0 Pro 1 3 ato 4 Met	tis ctc s Let a ggo y Gly c agi n Sen 250 a ggo n Cto p ccc g cto	Thr  age 1 Ser 2 tel 23! 2 ge 2 tel 3 tel 2 tel 3 tel 4 tel	Val  acc r Thr 220 g gcc n Ala 5 c tat a Tyr a gag r Gli c the b Phe t gcc s Ala 300 t gct r Ala 5	Glu 205 gcc Ala ) C gtc a Val c gac c Glu c agc c Glu c agc c Glu c agc c Lys	ttt a Phe g ttg Leu g cag a Glr 270 c cgc c Arg b ggt a Glr g cag c Gr	gcc Ala gcc Ala gcc Ala gtc gcc Ala gtc 255 gtc Val y Val	aga Arg Ala 240 Ala 240 Ala Pro Ala	gtt yal 225 ttt phe gtt yal 225 ttt phe gtt gtt gtt gtt gtt gtt gtt gtt gtt gt	Pro 210 gac Asp ctg	gag gag gag Glu	gcc i Ala gcc i Ala gag i Glu gaa i Glu 260 ata b Ile i Gly gttt l Phe	ttg ttg ggg ggg gaa gaa gaa gtct Ser caac Asr	ggg a Gly 230 c ccc a cc	Val 215 Cgc Arg gaa g Gli c Gci a Lei 1 Th: 29 g acci i Th: 1 Tr:	val ccg g Pro a gaa u Glu t gag a Glu c ctg u Leu 280 t aca r Thr a gtg r Val	<ul><li>867</li><li>915</li><li>963</li><li>1011</li><li>1059</li></ul>

RAW SEQUENCE LISTING DATE: 07/30/2004
PATENT APPLICATION: US/09/967,237A TIME: 12:24:38

Input Set : A:\PTO.DA.txt

Output Set: N:\CRF4\07302004\1967237A.raw

128	Pro	Gly	Asp	Ser	Arg	Leu	Gln	Leu	Asn	Phe	Arg	Ala	Thr	Gln	Pro	Leu	
129		330					335					340					
															agc		1203
132	Asn	Gly	Arg	Val	Ile	Glu	Ala	Ser	Phe	Pro	Ala	Gly	Val	Asp	Ser	Ser	
	345					350					355					360	
135	cct	cqq	gct	qct	qaq	cca	qtc	caq	ctq	aat	tcc	tgc	ctg	gct	gct	ggt	1251
															Āla		
137		, 2			365					370		-			375	-	
	gac	atc	cta	acc		att	+++	aac	ctc		ttt	act	atc	acc	agc	at.c	1299
															Ser		
141	тэр	110	пси	380	иси	Val	1110	O <sub>T</sub> y	385	пса	1110	7110	var	390	DCI	101	
	~~~	++a	att		a 2 a	ata	202	300		a a a	2012	200	aas		aaa	aaa	1347
																	1347
	Ата	Pne		vai	GIII	мес	Arg		GIII	нтѕ	Arg	Arg		1111	Lys	Сту	
145			395					400					405				7.200
						cca											1389
			Ser	Tyr	Arg	Pro		Glu	Val	Ala	Glu		GIY	Ala			
149		410					415					420					
																gccggt	
153	aac	gtc	ctg t	cct	gctca	at ta	atgc	cact	cct	ittta	aact	gcca	aagaa	aat t	tttt	caaaat	1509
155	aaat	cattt	cat a	aat													1522
158	<21	O> SI	EQ II	ON C	: 2					•							
159	<21	1> LF	ENGTI	H: 45	59												
160	<21	2 > <b>T</b> Y	PE:	PRT													
161	<21	3 > OF	RGAN	ISM:	HUM	AN											
163	< 40	)> SI	EOUE	VCE:	2												
164	Met	Ala	Pro	Leu	Cys	Pro	Ser	Pro	Trp	Leu	Pro	Leu	Leu	Ile	Pro	Ala	
165			-35		1			-30					-25				
	Pro	Ala		Glv	Leu	Thr	Val	Gln	Leu	Leu	Leu	Ser	Leu	Leu	Leu	Leu	
168	110	-20		<b>5</b> -1			-15					-10					
	Mot		Val	Hic	Pro	Gln		T.e.11	Pro	Ara	Met		Glu	Asp	Ser	Pro	
171	-5	LIO	VUL	11.1.15	110		1119	шеи	110			0	014	TIDP		110	
					- 1					- 5					1 ()		
		Glv		Clv	-1	1 Ser	Glv	Glu	Δsn	5 Asn	Pro	Leu	Glv	Glu	10 Glu	Asn	
		Gly			_		Gly	Glu		_	Pro	Leu	Gly		Glu	Asp	
174	Leu		Gly	15	Ser	Ser			20	Asp				25	Glu		
174 176	Leu		Gly Ser	15	Ser	Ser		Pro	20	Asp			Pro	25			
174 176 177	Leu Leu	Pro	Gly Ser 30	15 Glu	Ser	Ser Asp	Ser	Pro 35	20 Arg	Asp Glu	Glu	Asp	Pro 40	25 Pro	Glu Gly	Glu	
174 176 177 179	Leu Leu	Pro Asp	Gly Ser	15 Glu	Ser	Ser Asp	Ser Glu	Pro 35	20 Arg	Asp Glu	Glu	Asp Glu	Pro 40	25 Pro	Glu	Glu	
174 176 177 179 180	Leu Leu Glu	Pro Asp 45	Gly Ser 30 Leu	15 Glu Pro	Ser Glu Gly	Ser Asp Glu	Ser Glu 50	Pro 35 Asp	20 Arg Leu	Asp Glu Pro	Glu Gly	Asp Glu 55	Pro 40 Glu	25 Pro Asp	Glu Gly Leu	Glu Pro	
174 176 177 179 180 182	Leu Leu Glu	Pro Asp 45 Val	Gly Ser 30 Leu	15 Glu Pro	Ser Glu Gly	Ser Asp Glu Ser	Ser Glu 50	Pro 35 Asp	20 Arg Leu	Asp Glu Pro	Glu Gly Ser	Asp Glu 55	Pro 40 Glu	25 Pro Asp	Glu Gly	Glu Pro Asp	
174 176 177 179 180 182 183	Leu Glu Glu 60	Pro Asp 45 Val	Gly Ser 30 Leu Lys	15 Glu Pro Pro	Ser Glu Gly Lys	Ser Asp Glu Ser 65	Ser Glu 50 Glu	Pro 35 Asp Glu	20 Arg Leu Glu	Asp Glu Pro Gly	Glu Gly Ser 70	Asp Glu 55 Leu	Pro 40 Glu Lys	25 Pro Asp Leu	Glu Gly Leu Glu	Glu Pro Asp 75	
174 176 177 179 180 182 183	Leu Glu Glu 60	Pro Asp 45 Val	Gly Ser 30 Leu Lys	15 Glu Pro Pro	Ser Glu Gly Lys	Ser Asp Glu Ser 65	Ser Glu 50 Glu	Pro 35 Asp Glu	20 Arg Leu Glu	Asp Glu Pro Gly Pro	Glu Gly Ser 70	Asp Glu 55 Leu	Pro 40 Glu Lys	25 Pro Asp Leu	Glu Gly Leu Glu Asn	Glu Pro Asp 75	
174 176 177 179 180 182 183 185	Leu Glu Glu 60 Leu	Pro Asp 45 Val	Gly Ser 30 Leu Lys Thr	15 Glu Pro Pro Val	Ser Glu Gly Lys Glu 80	Ser Asp Glu Ser 65 Ala	Ser Glu 50 Glu Pro	Pro 35 Asp Glu	20 Arg Leu Glu Asp	Asp Glu Pro Gly Pro 85	Glu Gly Ser 70 Gln	Asp Glu 55 Leu Glu	Pro 40 Glu Lys	25 Pro Asp Leu Gln	Glu Gly Leu Glu Asn 90	Glu Pro Asp 75 Asn	
174 176 177 179 180 182 183 185	Leu Glu Glu 60 Leu	Pro Asp 45 Val	Gly Ser 30 Leu Lys Thr	15 Glu Pro Pro Val	Ser Glu Gly Lys Glu 80	Ser Asp Glu Ser 65 Ala	Ser Glu 50 Glu Pro	Pro 35 Asp Glu	20 Arg Leu Glu Asp	Asp Glu Pro Gly Pro 85	Glu Gly Ser 70 Gln	Asp Glu 55 Leu Glu	Pro 40 Glu Lys	25 Pro Asp Leu Gln	Glu Gly Leu Glu Asn	Glu Pro Asp 75 Asn	
174 176 177 179 180 182 183 185 186 188	Leu Glu Glu 60 Leu Ala	Pro Asp 45 Val Pro	Gly Ser 30 Leu Lys Thr Arg	15 Glu Pro Pro Val Asp 95	Glu Gly Lys Glu 80 Lys	Ser Asp Glu Ser 65 Ala Glu	Ser Glu 50 Glu Pro	Pro 35 Asp Glu Gly Asp	20 Arg Leu Glu Asp Asp	Asp Glu Pro Gly Pro 85 Gln	Glu Gly Ser 70 Gln Ser	Asp Glu 55 Leu Glu His	Pro 40 Glu Lys Pro Trp	25 Pro Asp Leu Gln Arg 105	Glu Gly Leu Glu Asn 90 Tyr	Glu Pro Asp 75 Asn Gly	
174 176 177 179 180 182 183 185 186 188	Leu Glu Glu 60 Leu Ala	Pro Asp 45 Val Pro	Gly Ser 30 Leu Lys Thr Arg	15 Glu Pro Pro Val Asp 95	Glu Gly Lys Glu 80 Lys	Ser Asp Glu Ser 65 Ala Glu	Ser Glu 50 Glu Pro	Pro 35 Asp Glu Gly Asp	20 Arg Leu Glu Asp Asp	Asp Glu Pro Gly Pro 85 Gln	Glu Gly Ser 70 Gln Ser	Asp Glu 55 Leu Glu His	Pro 40 Glu Lys Pro Trp	25 Pro Asp Leu Gln Arg 105	Glu Gly Leu Glu Asn 90	Glu Pro Asp 75 Asn Gly	
174 176 177 179 180 182 183 185 186 188	Leu Glu Glu 60 Leu Ala	Pro Asp 45 Val Pro	Gly Ser 30 Leu Lys Thr Arg	15 Glu Pro Pro Val Asp 95	Glu Gly Lys Glu 80 Lys	Ser Asp Glu Ser 65 Ala Glu	Ser Glu 50 Glu Pro	Pro 35 Asp Glu Gly Asp	20 Arg Leu Glu Asp Asp	Asp Glu Pro Gly Pro 85 Gln	Glu Gly Ser 70 Gln Ser	Asp Glu 55 Leu Glu His	Pro 40 Glu Lys Pro Trp	25 Pro Asp Leu Gln Arg 105	Glu Gly Leu Glu Asn 90 Tyr	Glu Pro Asp 75 Asn Gly	
174 176 177 179 180 182 183 185 186 188 189 191	Leu Glu Glu 60 Leu Ala Gly	Pro Asp 45 Val Pro His	Gly Ser 30 Leu Lys Thr Arg Pro 110	15 Glu Pro Pro Val Asp 95 Pro	Ser Glu Gly Lys Glu 80 Lys Trp	Ser Asp Glu Ser 65 Ala Glu Pro	Ser Glu 50 Glu Pro Gly Arg	Pro 35 Asp Glu Gly Asp Val 115	20 Arg Leu Glu Asp 100 Ser	Asp Glu Pro Gly Pro 85 Gln Pro	Glu Gly Ser 70 Gln Ser Ala	Asp Glu 55 Leu Glu His	Pro 40 Glu Lys Pro Trp Ala 120	25 Pro Asp Leu Gln Arg 105 Gly	Glu Gly Leu Glu Asn 90 Tyr Arg	Glu Pro Asp 75 Asn Gly	
174 176 177 179 180 182 183 185 186 188 189 191	Leu Glu Glu 60 Leu Ala Gly	Pro Asp 45 Val Pro His	Gly Ser 30 Leu Lys Thr Arg Pro 110	15 Glu Pro Pro Val Asp 95 Pro	Ser Glu Gly Lys Glu 80 Lys Trp	Ser Asp Glu Ser 65 Ala Glu Pro	Ser Glu 50 Glu Pro Gly Arg	Pro 35 Asp Glu Gly Asp Val 115	20 Arg Leu Glu Asp 100 Ser	Asp Glu Pro Gly Pro 85 Gln Pro	Glu Gly Ser 70 Gln Ser Ala	Asp Glu 55 Leu Glu His	Pro 40 Glu Lys Pro Trp Ala 120	25 Pro Asp Leu Gln Arg 105 Gly	Glu Gly Leu Glu Asn 90 Tyr	Glu Pro Asp 75 Asn Gly	
174 176 177 180 182 183 185 186 188 189 191 192 194 195	Leu Glu Glu 60 Leu Ala Gly Gln	Pro Asp 45 Val Pro His Asp Ser 125	Gly Ser 30 Leu Lys Thr Arg Pro 110 Pro	15 Glu Pro Pro Val Asp 95 Pro Val	Ser Glu Gly Lys Glu 80 Lys Trp Asp	Ser Asp Glu Ser 65 Ala Glu Pro Ile	Ser Glu 50 Glu Pro Gly Arg Arg 130	Pro 35 Asp Glu Gly Asp Val 115 Pro	20 Arg Leu Glu Asp 100 Ser	Asp Glu Pro Gly Pro 85 Gln Pro Leu	Glu Gly Ser 70 Gln Ser Ala Ala	Asp Glu 55 Leu Glu His Cys Ala 135	Pro 40 Glu Lys Pro Trp Ala 120 Phe	25 Pro Asp Leu Gln Arg 105 Gly Cys	Glu Gly Leu Glu Asn 90 Tyr Arg	Glu Pro Asp 75 Asn Gly Phe Ala	
174 176 177 180 182 183 185 186 188 191 192 194 195 197	Leu Glu Glu 60 Leu Ala Gly Gln	Pro Asp 45 Val Pro His Asp Ser 125	Gly Ser 30 Leu Lys Thr Arg Pro 110 Pro	15 Glu Pro Pro Val Asp 95 Pro Val	Ser Glu Gly Lys Glu 80 Lys Trp Asp	Ser Asp Glu Ser 65 Ala Glu Pro Ile	Ser Glu 50 Glu Pro Gly Arg Arg 130	Pro 35 Asp Glu Gly Asp Val 115 Pro	20 Arg Leu Glu Asp 100 Ser	Asp Glu Pro Gly Pro 85 Gln Pro Leu	Glu Gly Ser 70 Gln Ser Ala Ala	Asp Glu 55 Leu Glu His Cys Ala 135	Pro 40 Glu Lys Pro Trp Ala 120 Phe	25 Pro Asp Leu Gln Arg 105 Gly Cys	Glu Gly Leu Glu Asn 90 Tyr Arg	Glu Pro Asp 75 Asn Gly Phe Ala	

## RAW SEQUENCE LISTING

DATE: 07/30/2004 TIME: 12:24:38

PATENT APPLICATION: US/09/967,237A TIME:

Input Set : A:\PTO.DA.txt

Output Set: N:\CRF4\07302004\I967237A.raw

200	Leu	Arg	Leu	Arg	Asn	Asn	Gly	His	Ser	Val	Gln	Leu	Thr	Leu	Pro	Pro	
201					160					165					170		
203	Gly	Leu	Glu	Met	Ala	Leu	Gly	Pro	Gly	Arg	Glu	Tyr	Arg	Ala	Leu	Gln	
204				175					180	,				185			
206	Leu	His	Leu	His	Trp	Gly	Ala	Ala	Gly	Arg	Pro	Gly	Ser	Glu	His	Thr	
207			190					195					200				
209	Val	Glu	Gly	His	Arg	Phe	Pro	Ala	Glu	Ile	His	Val	Val	His	Leu	Ser	
210		205					210					215					
212	Thr	Ala	Phe	Ala	Arg	Val	Asp	Glu	Ala	Leu	Gly	Arg	Pro	Gly	Gly	Leu	
	220					225					230					235	
215	Ala	Val	Leu	Ala	Ala	Phe	Leu	Glu	Glu	Gly	Pro	Glu	Glu	Asn	Ser	Ala	
216					240					245					250		
218	Tyr	Glu	Gln	Leu	Leu	Ser	Arg	Leu	Glu	Glu	Ile	Ala	Glu	Glu	Gly	Ser	
219				255					260					265			
221	Glu	Thr	Gln	Val	Pro	Gly	Leu	Asp	Ile	Ser	Ala	Leu	Leu	Pro	Ser	Asp	
222			270					275					280				
224	Phe	Ser	Arg	Tyr	Phe	Gln	Tyr	Glu	Gly	Ser	Leu	Thr	Thr	Pro	Pro	Cys	
225		285					290					295					
227	Ala	Gln	Gly	Val	Ile	Trp	Thr	Val	Phe	Asn	Gln	Thr	Val	Met	Leu	Ser	
228	300					305					310					315	
230	Ala	Lys	Gln	Leu	His	Thr	Leu	Ser	Asp	Thr	Leu	Trp	Gly	Pro	Gly	Asp	
231					320					325					330		
233	Ser	Arg	Leu	Gln	Leu	Asn	Phe	Arg	Ala	Thr	Gln	Pro	Leu	Asn	Gly	Arg	
234				335					340					345			
236	Val	Ile	Glu	Ala	Ser	Phe	Pro	Ala	Gly	Val	Asp	Ser	Ser	Pro	Arg	Ala	
237			350					355					360				
239	Ala	Glu	Pro	Val	Gln	Leu	Asn	Ser	Cys	Leu	Ala	Ala	Gly	Asp	Ile	Leu	
240		365					370					375					
242	Ala	Leu	Val	Phe	Gly	Leu	Leu	Phe	Ala	Val	Thr	Ser	Val	Ala	Phe	Leu	
	380					385					390					395	
245	Val	Gln	Met	Arg	Arg	Gln	His	Arg	Arg	Gly	Thr	Lys	Gly	Gly	Val	Ser	
246					400					405					410		
248	Tyr	Arg	Pro	Ala	Glu	Val	Ala	Glu	Thr	Gly	Ala						
249				415					420								
253	<21	0 > S	EQ II	ON O	: 3												
254	<21	1> L	ENGT	H: 25	9												
255	<21	2> T	YPE:	DNA													
256	<21	3 > Ol	RGAN:	ISM:	HUM	ΑN											
				NCE:													
259	cgc	ccag	tgg 🤉	gtcat	tctt	cc c	caga	agag						•			29
262	<21	0 > S	EQ I	ои о	: 4					•							
263	<21	1> L	ENGT	H: 1	9												
	<21																
				ISM:		AN											
				NCE:													
				tgca	_	3	•										19
			-	ON O													
				H: 1	0898												
273	<21	2> <b>T</b>	YPE:	DNA													

DATE: 07/30/2004

TIME: 12:24:38

Output Set: N:\CRF4\07302004\1967237A.raw 274 <213> ORGANISM: HUMAN 276 <220> FEATURE: 277 <221> NAME/KEY: gene 278 <222> LOCATION: (1)..(10898) 279 <223> OTHER INFORMATION: full-length MN genomic sequence 281 <220> FEATURE: W--> 282 <221> NAME/KEY: unsure of base at position 1974 283 <222> LOCATION: (1974) 284 <223> OTHER INFORMATION: unsure of base at position 1974, which is in the 5' region flanking the transcription initiation site (3507) as determined by RNase protection assay. 285 287 <400> SEQUENCE: 5 288 qqatcctgtt gactcgtgac cttaccccca accctgtgct ctctgaaaca tgagctgtgt 60 289 ccactcaggg ttaaatggat taagggcggt gcaagatgtg ctttgttaaa cagatgcttg 120 290 aaggcagcat gctcgttaag agtcatcacc aatccctaat ctcaagtaat cagggacaca 180 291 aacactgegg aaggeegeag ggteetetge etaggaaaac eagagacett tgtteaettg 240 292 tttatctgac cttccctcca ctattgtcca tgaccctgcc aaatccccct ctgtgagaaa 300 294 aaaaaaaaa qacttacgaa tagttattga taaatgaata gctattggta aagccaagta 420 295 aatgatcata ttcaaaacca gacggccatc atcacagctc aagtctacct gatttgatct 480 296 ctttatcatt gtcattcttt ggattcacta gattagtcat catcctcaaa attctccccc 540 297 aagttetaat taegtteeaa acatttaggg gttacatgaa gettgaacet actacettet 600 298 ttgcttttga gccatgagtt gtaggaatga tgagtttaca ccttacatgc tggggattaa 660 299 tttaaacttt acctctaagt cagttgggta gcctttggct tatttttgta gctaattttg 720 300 tagttaatgg atgcactgtg aatcttgcta tgatagtttt cctccacact ttgccactag 780 301 gggtaggtag gtactcagtt ttcagtaatt gcttacctaa gaccctaagc cctatttctc 840 302 ttgtactggc ctttatctgt aatatgggca tatttaatac aatataattt ttggagtttt 900 303 tttgtttgtt tgtttgtttg tttttttgag acggagtctt gcatctgtca tgcccaggct 960 304 ggagtagcag tggtgccatc teggeteact geaageteea ceteeegagt teaegeeatt 1020 305 tteetqeete aqeeteeega qtagetggga etacaggege eegeeaceat geeeggetaa 1080 306 ttttttqtat ttttggtaga gaeggggttt caeegtgtta geeagaatgg tetegatete 1140 307 ctgaettegt gatecaeeeg eeteggeete eeaaagttet gggattaeag gtgtgageea 1200 308 ccgcacctgg ccaatttttt gagtctttta aagtaaaaat atgtcttgta agctggtaac 1260 309 tatggtacat tteettttat taatgtggtg etgaeggtea tataggttet tttgagtttg 1320 310 gcatgcatat gctacttttt gcagtccttt cattacattt ttctctcttc atttgaagag 1380 311 catqttatat cttttaqctt cacttqqctt aaaaqqttct ctcattaqcc taacacagtg 1440 312 tcattgttgg taccacttgg atcataagtg gaaaaacagt caagaaattg cacagtaata 1500 313 cttgtttgta agagggatga ttcaggtgaa tctgacacta agaaactccc ctacctgagg 1560 314 tctgagattc ctctgacatt gctgtatata ggcttttcct ttgacagcct gtgactgcgg 1620 315 actatttttc ttaaqcaaqa tatqctaaaq ttttqtqaqc ctttttccaq agagaggtct 1680 316 catatetgea teaagtgaga acatataatg tetgeatgtt tecatattte aggaatgttt 1740 317 gcttgtgttt tatgctttta tatagacagg gaaacttgtt cctcagtgac ccaaaagagg 1800 318 tgggaattgt tattggatat catcattggc ccacgctttc tgaccttgga aacaattaag 1860 319 ggttcataat ctcaattctg tcagaattgg tacaagaaat agctgctatg tttcttgaca 1920 W--> 320 ttccacttgg taggaaataa gaatgtgaaa ctcttcagtt ggtgtgtgtc cctngttttt 1980 321 ttgcaatttc cttcttactg tgttaaaaaa aagtatgatc ttgctctgag aggtgaggca 2040 322 ttcttaatca tgatctttaa agatcaataa tataatcctt tcaaggatta tgtctttatt 2100 323 ataataaaga taatttgtct ttaacagaat caataatata atcccttaaa ggattatatc 2160 324 tttgctgggc gcagtggctc acacctgtaa tcccagcact ttgggtggcc aaggtggaag 2220 325 gatcaaattt gcctacttct atattatctt ctaaagcaga attcatctct cttccctcaa 2280

RAW SEQUENCE LISTING

Input Set : A:\PTO.DA.txt

PATENT APPLICATION: US/09/967,237A

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/967,237A

DATE: 07/30/2004 TIME: 12:24:39

Input Set : A:\PTO.DA.txt

Output Set: N:\CRF4\07302004\I967237A.raw

## Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:5; N Pos. 1974
Seq#:25; Xaa Pos. 3,4
Seq#:26; Xaa Pos. 3,4
Seq#:58; N Pos. 1968
Seq#:90; N Pos. 1968
Seq#:110; N Pos. 647

## Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:25; Line(s) 698 Seq#:26; Line(s) 714,720

Seq#:58; Line(s) 1368,1369,1370 Seq#:90; Line(s) 1806,1808

Seq#:110; Line(s) 2104,2110,2111

DATE: 07/30/2004

## VERIFICATION SUMMARY

PATENT APPLICATION: US/09/967,237A TIME: 12:24:39

Input Set : A:\PTO.DA.txt

Output Set: N:\CRF4\07302004\1967237A.raw

L:282 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:5 L:320 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:1920 L:517 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:9 L:641 M:300 W: (50) Intentionally skipped Sequence, : Sequence Id (21) SEQUENCE: L:696 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:25 L:702 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0 L:718 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:26 L:724 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0 L:1363 M:259 W: Allowed number of lines exceeded, <223> Other Information: L:1366 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:58 L:1372 M:259 W: Allowed number of lines exceeded, <223> Other Information: L:1407 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:1920 L:1804 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:90 L:1812 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:90 L:1818 M:259 W: Allowed number of lines exceeded, <223> Other Information: L:1819 M:259 W: Allowed number of lines exceeded, <223> Other Information: L:1854 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:90 after pos.:1920 L:2108 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:110 L:2126 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:110 after pos.:600